

AMSAT News Service Weekly Bulletins

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SB SAT @ AMSAT \$ANS-173.01

ARIANE 502 FLIGHT UPDATE

HR AMSAT NEWS SERVICE BULLETIN 173.01 FROM AMSAT HQ

SILVER SPRING, MD, JUNE 22, 1997

TO ALL RADIO AMATEURS BT

BID: \$ANS-173.01

In a Joint ESA/CNES press release it has been announced that the Ariane 502 launch campaign has begun. The joint statement issued by ESA/CNES is quoted as follows, exactly as received:

"The Director General of the European Space Agency (ESA) and the Chairman of the Centre National d'Etudes Spatiales (CNES, the French space agency), acting on the recommendation made following the Flight Readiness Review held on 5 and 6 June, have given the go-ahead for the Ariane 502 flight launch campaign to start today, 16 June, at the Guiana Space Centre, Europe's spaceport at Kourou in French Guiana. This decision follows detailed reviews conducted over the past few months on the launch vehicle itself and the corresponding ground facilities (see ESA/CNES release of 24 March).

Over the next few weeks, mechanical, fluid and electrical integration of the cryogenic main stage, the solid booster stage, the vehicle equipment bay and the upper stage of the launcher will be proceeding in the Launcher Integration Building, while preparatory work will be under way in the Final Assembly Building on the upper composite: the Speltra, the fairing and the payload made up of two technological instrument platforms, Magsat H and B and two satellites: Teamsat (a satellite flying five European technology experiments and Amsat P3D (an international radio amateur satellite). Meanwhile, various tests, flight program functional simulations in particular, will be continuing in Europe.

These various operations are planned to lead to integration of the upper composite and filling of the upper stage and the attitude control system with propellant, the target date for the Ariane 502 flight now being set as from the end of September this year."

[ANS thanks ESA and CNES for this information.]

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SB SAT @ AMSAT \$ANS-173.02

MIR FREQ. CHANGE

HR AMSAT NEWS SERVICE BULLETIN 173.02 FROM AMSAT HQ

SILVER SPRING, MD, JUNE 22, 1997

TO ALL RADIO AMATEURS BT
BID: \$ANS-173.02

For the third time in less than a year, the Mir FM voice and packet frequency changed again June 15. But even as it was made, the switch to 145.985 MHz simplex was being called tentative and experimental. It also was controversial. As a result, Mir officially will end the worldwide experiment on 145.985 MHz as of June 23, but leave the frequency available as an option to the Mir crew only while Mir is over the US. Mir packet sysop Miles Mann, WF1F, said US astronaut Mike Foale, KB5UAC, now aboard Mir, can use "any channel he wants" when he's over the US, including 145.985, but he has to switch to 145.200/800 when Mir is elsewhere. Also, the radio will remain on the split pair when the crew is sleeping. The new frequency may be used for both voice and packet operation.

The Mir International Amateur Radio Experiment--MIREX--cited "numerous complaints from around the world" that the 145.200/800 split-frequency combination did not work very well as the main reason for trying 145.985. Last November, Mir changed from 145.550 MHz simplex to the split-frequency pair. "The radio has been almost impossible to use since November 1," said Mann, who called 145.985 MHz "an excellent compromise."

In a posting to the AMSAT bulletin board, John O'Hara, KB8TJX, in Wellsville, Ohio, reports he worked KB5UAC aboard Mir on 145.985 MHz for several minutes right after the changeover. "Mike said that it was working out a lot better for him also. He said he had trouble sorting out the voice contacts from the packet and that the duplex was also confusing to him," said O'Hara, who's AMSAT coordinator for Eastern Ohio, Western Pennsylvania and the northern panhandle of West Virginia.

When the "experiment" was announced, Mann had expressed the hope that if the 145.985 MHz channel worked much better, the Mir crew might be more inclined to get on the air than previously. Mann said the 145.800/200 MHz split-frequency operation suffered from interference from terrestrial users and drew widespread complaints from hams in the US, Japan and Australia (145.200 MHz is a repeater output or input frequency in many countries). He said the new frequency complies with the IARU band plan for satellite operation and will reduce desensing of Mir's 2-meter station by commercial VHF activities taking place aboard spacecraft in the 143-MHz range. Mann said MIREX is working on a fix for the desensing problem, and hopes to have it in operation by this fall.

A return to the 145.55 MHz frequency used previously by Mir was rejected because it's too close to a popular simplex frequency in Europe. Switching to 145.79 MHz also was out because it's in use by many semi-permanent packet operations.

Equipment aboard Mir includes a Kenwood TM-733, a PacComm Handi-Packet modem, a dual-band antenna, and a new, huskier power supply capable of powering the TM-733 to its full 50 W output. Mann said the output power typically is 10 W, however.

MIREX requests reports on the 145.985 MHz channel. Signal and interference reports go to Dave Larsen, N6CO, Box 1501, Pine Grove, CA 95665; e-mail doc@volcano.net.

[ANS thanks the ARRL for this news on MIR.]

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SB SAT @ AMSAT \$ANS-173.03
P3D DELAY

HR AMSAT NEWS SERVICE BULLETIN 173.03 FROM AMSAT HQ
SILVER SPRING, MD, JUNE 22, 1997
TO ALL RADIO AMATEURS BT
BID: \$ANS-173.03

AMSAT Phase 3D officials remain optimistic despite another delay in the launch of the Ariane 502 that is scheduled to carry Phase 3D aloft in mid-September. The European Space Agency, ESA, announced this week that the Ariane 502 launch will be delayed a couple of weeks until September 30 at the earliest while the rocket gets another engine. It's the second delay announced this year for the Phase 3D vehicle. In March, the launch date was moved from early July to mid-September. AMSAT-NA President Bill Tynan, W3XO, remains philosophical about the schedule changes. 'It's more of the same,' he said. 'We're trying to use all the time they give us productively.'

Orbital Report On-Line said this week that a faulty component was detected in the liquid oxygen turbopump of the Vulcain engine due to fly on Ariane 504. Since the origin of the flaw was identified as a possible production defect and a similar element is known to be in the pump of the engine already mounted on the Ariane 502 rocket that recently arrived in Kourou, French Guyana, the European Space Agency and the launch consortium (CNES) have decided to remove the engine and replace it with the one originally scheduled for Ariane 503, which features a component from an older production batch.

Any delay increases the overall cost of the project, but Tynan characterized the additional cost factor of the most recent delay as 'noise level.' He did not have a precise cost estimate. Tynan, who was at the Phase 3D Integration Lab in Orlando, Florida, said everything is going along well in the process. 'The RF equipment integrated fine,' he noted.

For more information on Phase 3D, including pictures of the assembly and integration process, see
<http://www.amsat.org/amsat/sats/phase3d.html>.

[ANS thanks the ARRL for this report.]

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SB SAT @ AMSAT \$ANS-173.04
A0-10 UPDATE

HR AMSAT NEWS SERVICE BULLETIN 173.04 FROM AMSAT HQ
SILVER SPRING, MD, JUNE 22, 1997
TO ALL RADIO AMATEURS BT
BID: \$ANS-173.04

A0-10 is returning to active life. On June 17th, Dan James, KE0DH, in Minnesota and James O' Neill, WA7OPE, In Montana enjoyed an almost solid 1 hour contact, starting at 0420 UTC. The satellite was nearing perigee, moving southeast from out over the pacific. Both stations had ,at times, S-9 downlink signals. A slow, predictable QSB fade was observed, getting worse as A0-10 neared its lowest point. KE0DH was still able to hear his downlink as A0-10 approached only 4 degrees above his horizon. The following night KE0DH worked WA3JYM in Pennsylvania and W8LKX In Ohio under the same conditions.

Both WA7OPE and KE0DH enjoy similar working conditions, gain antennas on AZ/EL mounts, with both stations running about 80 watts output on the 435 MHz uplink. Very little FM'ing was observed during the hour long QSO. KE0DH was able to reduce his output to under 25 watts and still achieve a Q5 downlink! Both Dan and Jim used the updated AO-10 information that Stacy Mills, W4SM, has posted on his Internet web site to predict how AO-10 would respond before setting up the scheduled contact.

[ANS thanks James O' Neill ,WA7OPE, and Dan James, KE0DH, for this information]

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SB SAT @ AMSAT \$ANS-173.05
SCOPE NEWS

HR AMSAT NEWS SERVICE BULLETIN 173.05 FROM AMSAT HQ
SILVER SPRING, MD, JUNE 22, 1997
TO ALL RADIO AMATEURS BT
BID: \$ANS-173.05

A brief description of the SCOPE project is now available in Japanese and English. The SCOPE Home Page is located at:

<http://www.jamsat.or.jp/scope/>

SCOPE is an experiment flying on the Phase 3D satellite that will provide images of celestial objects through the use of a CCD imaging camera.

[ANS thanks SpaceNews, Tak Okamoto and the JAMSAT SCOPE Project Team for this information.]

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SB SAT @ AMSAT \$ANS-173.06
CONFERENCE UPDATE

HR AMSAT NEWS SERVICE BULLETIN 173.06 FROM AMSAT HQ
SILVER SPRING, MD, JUNE 22, 1997
TO ALL RADIO AMATEURS BT
BID: \$ANS-173.06

The 1997 Western States Weak Signal Society Technical Conference will be held on Friday through Sunday, October 3 to 5, at the Montecito-Sequoia Lodge. The lodge is located in the Sequoia National Forest between Kings Canyon and Sequoia National Parks, 65 miles east of Fresno at 7500 feet, just minutes from Grant Grove & the famous Giant Sequoia Trees! For rates and reservations, call Montecito-Sequoia at (800) 227-9900.

N1BWT	A Single-board Transverter for 5760 MHz (and Phase 3D)
K6QXY	6m EME and large array engineering
NU8I	VHF amplifier design using Svetlana tubes
K7XC	VHF Contesting and What It Takes To Win
W6GGV	Designing ON-Wayl power dividers
W6RXQ	GPS and Ham Radio
WB6NOA	ATV Record From Hawaii to California
K6WR	Regulatory issues of interest to the weak signal enthusiast
K6MYC	To Be Determined

A brief description of how GPS works and how to use GPS for some interesting Ham Radio applications, including beacon synchronization, Grid Square hopping, and Microwave mountaintopping. Some hands on

demonstrations will be available during non-conference hours.

For more information on our 1997 Conference, contact Robert Brown N7STU,
at wswss@contesting.com

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SB SAT @ AMSAT \$ANS-173.07
MORE SPUTNIK-1

HR AMSAT NEWS SERVICE BULLETIN 173.07 FROM AMSAT HQ
SILVER SPRING, MD, JUNE 22, 1997
TO ALL RADIO AMATEURS BT
BID: \$ANS-173.07

For the 40th anniversary of the launching of SPUTNIK-1 and the beginning of the space Conquest, l'Aeroclub of France and Russian Astronautical Federation are associated to commemorate this event. Last February 20th, during a conference, they were god fathers for the signature of the protocol of action between the radioclub, FR5KJ, of Jules Reydellet College in St Denis Reunion Island and the Polytechnic Laboratory of Nalchik Kabardine Balkar Republique (Russian Federation) The goal of the Project is to interest as many young people as possible in space matters, leading to an extraordinary realization and maybe to get a job in this field. The pupils from the two schools are working on a SPUTNIK 1 miniature satellite which will be able to work in space, when it will be hand thrown by a cosmonaut from the MIR orbital station.

The Russians will build the satellite body in which will be placed the transmitter made by the French pupils It will emit a "bip, bip" (sound track38 ko) on the 2 meters band starting October the 4th, 1997. During one month, every VHF equipped amateur radio station in the world will be able to receive the signal emitted from the miniature satellite .

[ANS thanks Philippe Mondon, FR5DN, for this news.]

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SB SAT @ AMSAT \$ANS-173.08
WEEKLY SATELLITE REPORT PT 1

HR AMSAT NEWS SERVICE BULLETIN 173.08 FROM AMSAT HQ
SILVER SPRING, MD, JUNE 22, 1997
TO ALL RADIO AMATEURS BT
BID: \$ANS-173.08

MIR:

(All operations, Voice and Packet will be on 145.985 MHz, Simplex FM until June 23rd, 1997.)

Mir officially will end the worldwide experiment on 145.985 MHz as of June 23, but leave the frequency available as an option to the Mir crew only while Mir is over the US. Mir packet sysop Miles Mann, WF1F, said US astronaut Mike Foale, KB5UAC, now aboard Mir, can use "any channel he wants" when he's over the US, including 145.985, but he has to switch to 145.200/800 when Mir is elsewhere.

SAFEX, MIR 70cm Repeater

(Uplink 435.750 MHz FM, Downlink 437.950 MHz FM,
Subaudible tone 141.3 Hz)

Mike Seguin, N1JEZ, finally had some time to work a pass of the MIR /SAFEX repeater on the evening 6/21/97 @ 2223 UTC over Vermont. Mike reports he couldn't key up the repeater, and he also heard nothing on the downlink. He quickly tuned down to the Digitalker freq. 437.925 +/- doppler. There N1JEZ heard a message from Mike Foale, KB5UAC, about the Space Festival

and the Student Model Rocket contest. The message repeats every few minutes.

RS-10

(Uplink 145.865-145.905 MHz CW/SSB, Downlink 29.36-29.4 MHz CW/SSB)

RS-10 Still silent.

RS3A needs some SWL reports of RS-10.

What time you heard RS-10, and also the date.

Send info via packet to Andy, .RS3A.

Packet: RK3KPK@RA3KP.MSK.RUS.EU

RS-12

(Uplink 21.21-21.25 MHz CW/SSB, Downlink 29.41-29.45 MHz or 145.91-145.95 MHz CW/SSB)

Signals on RS-12 in North America during May and June (almost exclusively daylight passes) are weakened by increased ionospheric activity which is keeping 15m active during the daylight hours. This makes it especially important for the 'old timers' to warn the newcomers on RS-12 to set their uplink frequency and leave it alone to prevent sweeping across the 15m band and QRM-ing the terrestrial QSOs in progress

[ANS thanks Dick Montgomery, N3DV, for this update.]

RS-15

(Uplink 145.858-145.898 MHz CW/SSB, Downlink 29.354-29.394 MHz CW/SSB)

WT0N reports that downlink signals are still weak from RS-15, but the bird is still workable.

(Hint: If SSB doesn't work for you, try CW. CW is very easy to hear on the downlink!)

RS-16

RS-16's 435.504 MHz beacon is active. Also, the 29.408 MHz beacon is reported as being heard.

No transponder activity yet.

70cm beacon =RS16 ZEAA ZEJA ZEAA(AA is sent as one character);P163,o0,n0,m0,l0,k7,j5,i7,h49,g0,f159,e8,d6,c8,b11,a7.

Transponder information on RS-16.

Uplink = 145.915 - 145.948 MHz

Downlink = 29.415 - 29.448 MHz

Beacons = 29.408 , 29.451 MHz

Pwr 29 MHz Down = 1.2 W /4 W

Beacon 1 = 435.504 MHz

Beacon 2 = 435.548 MHz

Pwr 435 MHz Beacons = 1.6 W

[ANS thanks Bernie Hall, WY4D, for this report..]

F0-20

(Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9 MHz CW/USB)

Operating normally. Strong downlink signal. Very busy during passes over North America. Please remember to adjust the higher frequency for doppler when the bird is in analog, JA, mode. This means adjust the 70 cm frequency, the downlink, for doppler shift. You do not have to adjust the 2 meter frequency, the uplink, for doppler.

K0-23

(Uplink 145.85, 145.9 MHz FM, Downlink 435.175 MHz FM, 9600 Baud FSK.)

K0-23 operating normally.

K0-25

(Uplink 145.980 MHz FM, Downlink 436.5 MHz FM,
9600 Baud FSK.)
K0-25 operating normally.
[ANS thanks Jim Weisenberger, AA7KC, for his reports on
K0-25 and K0-23.]

A0-27
(Uplink 145.85 MHz FM, Downlink:
436.792 MHz FM (As of April 1, 1997)
Operating normally.
A0-27 (1-Jun-1997- 10:58 UTC Orbit-19182)
The satellite is working normally over North America.
and Europe.
Current A0-27 schedule information can be found at
www.umbra.com

Tepr 4 = 32 counts 16 Minutes
Tepr 5 = 66 counts 18 Minutes
[ANS thanks Michael Wyrick, N4USI, A0-27 Control-op, for this update.]

F0-29
Voice/CW
(Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9 MHz CW/USB)
Digital
(Uplink 145.85, 145.87, 145.910 MHz FM, Downlink 435.910 MHz FM 9600 baud
BPSK)
Please remember to adjust the higher frequency for doppler when the bird
is in analog, JA, mode. This means adjust the 70 cm frequency, the
downlink, for doppler shift. You do not have to adjust the 2 meter
frequency, the uplink, for doppler.

The latest F0-29 Schedule can be found at.
<http://www.kt.rim.or.jp/~jrlnvu/eindex.html>
June
20(Fri) 09:41z JD 9600bps FSK MailBox
27(Fri) 00:11z JA
July 4(Fri) 09:13z JD Digi-talker
8(Fri) 09:06z JA
[ANS thanks Kazu Sakamoto, JJ1WTK, for this report.]

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SB SAT @ AMSAT \$ANS-173.09
WEEKLY SATELLITE REPORT PT 2

HR AMSAT NEWS SERVICE BULLETIN 173.09 FROM AMSAT HQ
SILVER SPRING, MD, JUNE 22, 1997
TO ALL RADIO AMATEURS BT
BID: \$ANS-173.09

A0-10
(Uplink 435.030-435.18 MHz CW/LSB, Downlink 145.975-145.825 MHz
CW/USB)
Operational.
Many QSO's heard as when the bird was in view from
north America. WT0N reports some slight FM'ing on the downlink..

OSCAR-11
(Downlink 145.825 MHz. FM, 1200 Baud PSK. Beacon 2401.500 MHz..)
Operating normally.
Telemetry nominal. The battery voltage has recently improved to
around 13.9 volts, and the internal temperatures have continued to
fall, due to solar eclipses. The battery temperature is now 4
degrees C, or 18 degree below the full sunlight condition.

The operating schedule is unchanged.

- ASCII status (210 seconds)
- ASCII bulletin (60 seconds)
- BINARY SEU (30 seconds)
- ASCII TLM (90 seconds)
- ASCII WOD (120 seconds)
- ASCII bulletin (60 seconds)
- BINARY ENG (30 seconds)

[ANS thanks Clive Wallis, G3CWV, for this information.]

AMSAT-OSCAR-16 (PACSAT)

(Uplink 145.9, 145.92, 145.94, 145.86 MHz FM, 1200 bps Manchester FSK
Downlink 437.0513 MHz SSB, 1200 bps RC-BPSK 1200 Baud PSK.
Beacon 2401.1428 Mhz.)

Operational.

Telemetry data received from AO-16

uptime is 1007/06:01:17. Time is Sat Jun 21 11:26:27 1997

RC PSK TX Out= 0.428 W

Total Array C= 0.256 Bat Ch Cur=-0.009 Ifb= 0.054 I+10V= 0.266

TX:010B BCR:83 PWRC:59E BT:3C WC:25 EDAC:93

Graphic information about WOD/Telemetry values can be found at:

<http://www.arrakis.es/~ealbcu/wod.htm>

[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]

DO-17(DOVE)

(Downlink 145.825 MHz FM, 1200 Baud AFSK.

Beacon 2401.220 MHz.)

No report available.

WEBERSAT (WO-18)

(Downlink 437.104 MHz SSB, 1200 Baud PSK AX.25.)

No report available.

LUSAT-OSCAR-19

(Uplink 1200 bps Manchester FSK Uplinks:

145.84, 145.86, 145.88, 145.9 MHz FM, Downlink 437.125 MHz SSB,
1200 bps RC-BPSK.)

Operational.

Telemetry data received from LO-19:

uptime is 731/21:48:59. Time is Sat Jun 21 11:54:09 1997

RC PSK TX Out= 0.534 W

Total Array C= 0.268 Bat Ch Cur= 0.137 Ifb= 0.035 I+10V= 0.079

TX:016 BCR:80 PWRC:36E BT:3C WC: 0

NOTE: Add 6.83 minutes to the clock of the satellite.

Graphic and general information about Telemetry values can be found at:

<http://www.arrakis.es/~ealbcu/lo19.htm>

[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]

UO-22:

(Uplink: 145.9 or 145.975 MHz FM. Downlink 435.120 MHz FM

9600 Baud FSK.)

A problem with UO-22 seems to be related to the software changes that were made last week prior to the last flight software reload. During the last pass over Surrey on Saturday morning, June 7th, Chris Jackson closed the spacecraft store and forward communications system for general use to allow him to diagnose the problem..

[ANS thanks Chris Jackson, G7UPN / ZL2TP0,

Groundstation and Operations Manager, for this report.]

IO-26 (ITAMSAT)

(Uplink 145.875, 145.9, 145.925, 145.95MHz FM, Downlink 435.822 MHz SSB,

1200 Baud PSK.)

I0-26 controllers report that the spacecraft is now in IHT mode. The new ROBOT software is under currently undergoing tests. The beacon reports that the digipeater is OFF and that the ROBOT is undergoing tests. Controllers ask that groundstations please do not transmit on any of the satellite's uplink frequencies for the time being.

[ANS thanks Daniele Piercarlo, IK2XR0, ITMSAT Command Station for this report.]

[Please send your Satellite or News reports to ANS Editor B.J. Arts, WT0N, via e-mail, at bjarts@the-bridge.net or to wt0n@amsat.org]

/EX

BJ Arts

Amateur callsign: WT0N

ARMY MARS callsign: AAR5EL

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Amsat News Service Bulletin Editor